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Faizatul Akmar Abdul Nifa, Sharima Ruwaida Abbas, Chong Khai Lin, and Siti Norezam Othman



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Developing A Disaster Education Program for Community Safety and Resilience: The Preliminary Phase

Faizatul Akmar Abdul Nifa^{1, a)}, Sharima Ruwaida Abbas^{2, b)}, Chong Khai Lin^{1, c)}
and Siti Norezam Othman¹

¹*School of Technology Management and Logistics, College of Business, Universiti Utara Malaysia.*

²*School of Applied Psychology, Social Work and Policy, College of Arts and Sciences, Universiti Utara Malaysia.*

^{a)}Corresponding author: faizatul@uum.edu.my

^{b)}sharima@uum.edu.my

^{c)}klchong@uum.edu.my

Abstract. Resilience encompasses both the principles of preparedness and reaction within the dynamic systems and focuses responses on bridging the gap between pre-disaster activities and post-disaster intervention and among structural/non-structural mitigation. Central to this concept is the ability of the affected communities to recover their livelihood and inculcating necessary safety practices during the disaster and after the disaster strikes. While these ability and practices are important to improve the community safety and resilience, such factors will not be effective unless the awareness is present among the community. There have been studies conducted highlighting the role of education in providing awareness for disaster safety and resilience from a very young age. However for Malaysia, these area of research has not been fully explored and developed based on the specific situational and geographical factors of high-risk flood disaster locations. This paper explores the importance of disaster education program in Malaysia and develops into preliminary research project which primary aim is to design a flood disaster education pilot program in Kampung Karangan Primary School, Kelantan, Malaysia.

INTRODUCTION

Natural disasters are beyond the control of human beings and cannot be predicted accurately when it occurs. Major natural disasters like floods, earthquake, landslides and droughts when they happen, they result in the threat of human life, loss of property, affect structure, agriculture and environment. The impacts of the disaster are different in intensities and coverage areas. Natural disasters happen every year, and their incidence and frequency seem to have significantly increased in recent decades, mostly because of environmental degradation, such as deforestation, intensified land use and the increasing population.

Flooding is an environmental hazard that can occur almost all around the world. [1] found that most floods are happen to be linked to river flood. However, [2] stated that the frequency of flood increase was mostly due to the decomposition of the riverside. Flood is a disaster that can occur in various situation either basin zone or coastal area [2]. Flood brings many impacts to the environment and people like physical damages, mentality disturbance, infectious diseases and others.

In general, [3] stated that flooding could be categorised into flash floods, monsoon floods, coastal floods and others. They also mentioned that flood could lead to many problems to human. There are several definitions of the flood had defined by the researchers. Flood is defined as the water of river channel is higher and weaken the river channel capacity, caused the overflow to the dry surface and increased the surface water runoff [1, 4, 5].

Nevertheless, [6] suggested the definition of the flood should be a water level or discharge that is higher than the flood level or flood discharge. The reason why this definition was made because floods occur due to large amounts of water and water flow that cause the water level exceeds the standard level of the river. In Kelantan, floods usually happened at the stage at where the river channel fully filled with rainfall and overflow to its river bank.

The states in the east coast of the Malaysian peninsular experience annual floods due to the Northeast Monsoon from the period of November to March. However, in 2014 Malaysia has experienced its worst recorded flood disaster. The impact of this flood left the nation with expensive damages and great devastation as well [7]. The 3 states in the East Coast (Kelantan, Terengganu and Pahang) had suffered damages amounting to RM204 million [8]. The Kelantan State Education Department has identified 31 schools affected by the flood in the state as reported by [9]. Although nothing could be done to revert the situation, the lack of disaster preparedness in a bigger scale have partially contributed towards the massive amount of devastation experienced by the local community in affected areas.

DISASTER RESILIENCE AND THE COMMUNITY

Disaster resilience encompasses both the principles of preparedness and reaction within the dynamic systems and focuses responses on bridging the gap between pre-disaster activities and post-disaster intervention and among structural/non-structural mitigation. [10, 11]. Integral to these concepts is the role of the community itself, and how the community adapts to being prepared for disaster as well as being mildly affected by the disaster, and ultimately how the community takes on the effort of disaster risk reduction. [12] proposed that engaging the user community is key in gaining acceptance for resilient measures. This is also parallel with the suggestion of [13] which highlighted the importance of identifying how disasters and resilience are framed at the local level. By consulting the community at risk, the local socio-economic status of the population can be also taken into consideration, and thus be addressed accordingly in the post-disaster recovery stage. The most important group to focus is school community. The result showed the necessity to integrate tsunami education materials in school disaster education curriculum [14].

The Hyogo Framework for Action 2005 – 2015 (HFA) has become the worldwide reference for building the resilience of nations and communities to disasters [15]. The HFA attempts to create the guidelines for a multi-scale, holistic strategy of resilience and in this way attempts to achieve a ‘substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries [16]. Taking the cue of the HFA’s third key course of action, which is *to use knowledge, innovation and education to build a culture of safety and resilience*, this research aims to assist schools in the vulnerable area for flood disasters in developing a program that can be applied periodically by the school to teach young children about natural hazards and disasters.

THE ROLE OF EDUCATION IN INCULCATING DISASTER RESILIENCE

It has been widely acknowledged that education takes on a pivotal role in reducing disasters and achieving human security in the attempt to achieve sustainable development. Previous experiences have shown positive effects of education in disaster risk management. Children who have been taught about the phenomenon of disasters and how to react to those situations have proved to be able to respond promptly and appropriately, thereby warning others and protecting themselves during times of emergencies [17]. The importance of disaster education at school is increasing because of the following reasons: (i) children are one of the most vulnerable sections of the society during a disaster; (ii) they represent the future; (iii) school serves as a community’s central location for meetings and group activities; and (iv) effects of education can be transferred to parents and community [18]. With this in view, the school is regarded to play a crucial role in raising awareness among students, teachers, and parents as well as within the local community. Therefore, school readiness for disaster is very important to ensure preparedness activities are in place.

In the learning process, there are many ways that disaster education may take place. It should be highlighted that many researchers have identified that disaster education works best in where the learning process happens out of the traditional classroom setting. In this aspect, the learning process have shown to be more successful through experience-based and action-oriented learning. Therefore, the formulation of an effective disaster education programs should include collaborations with the researchers, local community and school so so that the learning process not only be based on hard facts but also cross-learning through sharing of stories, facts and cultural approaches [17, 19]. Furthermore, [20] highlighted the need for integrating community development initiatives to increase resilience with disaster education and facilitate self-help capacities within the vulnerable community to reduce the reliance on external response and recovery resources.

A Disaster Education Pilot Program

Kampung Karangan, District of Olak Jeram, Kelantan.

The authors has been conducting field trips to identify the progress of the recovery stage of the disaster affected area in Kelantan specifically in Kampung Karangan, in the district of Olak Jeram within the Kuala Krai territory, Kelantan. The authors has taken a particular interest studying the community resilience of the 2014 flood victims. The entire village was totally inundated during the 2014 flood and 80% of the homes was destroyed during the disaster. It took two years to finally relocate the victims to their new permanent homes or personal dwellings which have been repaired. The schools which were designated for shelters were badly affected and damaged. However, under close scrutiny, it is apparent that only the aspect of physical and housing recovery that seems to be progressing, while the various aspect of social recovery is still not fully addressed. Preparedness and resilience towards disaster are imperative matters for this village, as it is located in flood prone-area on the banks of Sungai Lebir and flood disaster are likely to happen each year during the North East monsoon season.

In a preliminary field work conducted in February 2017, the authors have arranged for an informal meeting with the school management and conducted site reconnaissance within the school as well as the surrounding area in Kampung Karangan. The main purpose of this preliminary fieldwork is to explore the current awareness of the community in Kampung Karangan on flood disaster risk. During this preliminary field work, 2 focus group discussions were also conducted; the first with the primary school students aged 10-12 years old, who were 8-10 years old respectively during the 2014 great flood in Kelantan and the second with the local residents in Kampung Karangan. The authors were able to get a perspective of the local community and the awareness among children in the area. The following Figure 1 and 2 show the photos taken during the fieldwork.



FIGURE 1. Preliminary fieldwork to Kampung Karangan Primary School. Discussion with the school administration team and (b) focus group protocol briefing. Photos taken by authors.



FIGURE 2. Preliminary fieldwork to Kampung Karangan. Focus group with the local residents. Photos taken by authors.

Through collaborative efforts and expertise, this research shall focus on the issues of community resilience and safety and how disaster education in primary schools may benefit the overall community preparedness in Kampung Karangan, in the district of Olak Jeram within the Kuala Krai territory, Kelantan. This research shall also propose the educational program on disaster preparedness that can later be conducted on a periodical basis by the teachers in Kampong Karangan Primary School. The research will focus on awareness among school community; students, teachers and administrators about disaster preparedness. Based on the initial findings, a draft of disaster education program has been developed and will be presented to the school and local community by November 2017.

METHODS OF RESEARCH

This research will be conducted in a series of fieldwork. The first fieldwork will be conducted using semi-structured interviews with the local community and school mainly the school administrators, students and teachers. All interviews shall be digitally recorded and verbatim transcribed. The main purpose of this stage is to explore the awareness and preparedness of the community as a whole and the current level of safety and resilience towards flood disaster within the community and school.

Concurrently a literature study shall be conducted to explore the best practices of other countries that have implemented disaster education at the primary school level. The strength and weaknesses of the practices shall be noted and a preliminary disaster education program for the area in research shall be presented.

The second fieldwork shall involve semi-structured interviews and group discussions with the school administrators, students, teachers and local leaders in Kampung Karangan Primary School and other effected schools in Kuala Krai territory, Kelantan. In this stage, the proposed program shall be presented to the administrators and teachers and methods of pilot program execution will be finalized prior to implementation. All interviews shall be digitally recorded and verbatim transcribed.

The third fieldwork will involve the pilot program implementation with the primary school students. Feedbacks and responses of the students and teachers will be recorded and related issues with the program shall be noted and documented for further revision. The program shall be video-taped and digitally recorded where applicable.

The final stage of this research will involve integration of the various sources of data and revisions made to the program based on the pilot program before it can be implemented periodically in Kampung Karangan Primary School and other identified schools. Further details pertaining to the program such as frequency of the program, scale and size of participants, budget requirements and skill of teachers will be detailed out in the final proposal.

CONCLUSION

Education for the younger generation is a crucial aspect in building a nation. In the aspect of inculcating disaster resilience, education for primary school children is important so the generation will have an awareness and preparedness for flood hazard or other related disasters. This research shall contribute towards developing a customized program module for Disaster Education appropriate for the primary school students in the flood disaster prone area. This module can be applied periodically by the school administrators and teachers in the following years. By incorporating the technical input from other disaster education programs with the native knowledge from the local community within the flood risk area in this research; an area specific, highly customized and sustainable education programme can be produced to be utilized by the school and local community in many years to come.

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